UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 28, 2004

Mr. Steve Hill
Air Pollution Control Officer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Dear Mr. Hill:

We appreciate the District's efforts to work with us regarding the Bay Area refinery permits. I feel that we have made a great deal of progress on most of the issues, leaving a few where we have identified that the EPA and the District have different positions. I want to let you know that these are our priority issues still remaining from the list that we discussed when you met with us at our office regarding the Chevron, Tesoro, and Valero permits. We are also reviewing the draft responses to comments that you sent us in the few weeks and will let you know soon where we think that additional discussion would be helpful.

We look forward to continuing to work with the District. If you have any questions concerning our comments, please contact me at (415) 972-3974 or Ed Pike of the Permits Office at (415) 972-3970.

Sincerely,

Gerardo C. Rios
Chief, Air Permits Office

Enclosure

BAY AREA REFINERY PERMITS INITIAL LIST OF ISSUES FOR DISCUSSION
JULY 28, 2004

1. Exemption of flares from NSPS J (Chevron, Conoco-Phillips, Shell, and Valero)

Issue: Flares are subject to the fuel H2S limits under NSPS J, which prohibits the combustion of fuel gas that contains H2S in excess of 0.10 gr/dscf. Subpart J, however, contains an exemption from the H2S limit for the combustion of gases resulting from emergency malfunctions, process upsets, and relief valve leakage. Typically, this exemption is granted on an event-by-event basis. The Bay Area is taking a blanket-exemption approach for several flares at the Chevron, Conoco-Phillips, Shell, and Valero refineries. The refineries have identified a group of flares (~ 15 total) that are "not designed" to combust routine releases; therefore, NSPS J is not being treated as an applicable requirement for these flares. BAAQMD, however, has not adequately documented its determination that these flares are not designed to combust routine releases nor how routine releases can be prevented at these flares.

The District has noted in the Statements of Basis for these refineries that these flares are physically capable of combusting routine releases and has added a federally enforceable condition prohibiting the combustion of routine releases at these flares. While the District's flare monitoring rule requires the source to submit a root cause analysis when more than one million standard cubic feet of gas is flared in any 24 hour period, this requirement does not assure that *each* flaring event qualifies for the emergency exemption provided in NSPS J, nor is it federally enforceable. We believe there needs to be a federally enforceable reporting requirement to verify that each event at these flares qualify for the exemption from the H2S limit, since this is a federal requirement.

Proposed Resolution:

- Add a federally enforceable condition requiring that the source keep a record of every flare event (at exempt flares only) and its root cause.
- Alternatively, the District could implement NSPS J such that the exemption is granted on an event-by-event basis with verification that individual events are exempt.

2. Support facilities (including, refinery loading racks and the Tesoro hydrogen plant)

Issue: The District's draft permits omit certain operations that appear to qualify as support facilities. For example, the truck loading racks at each refinery and the hydrogen plant at the Tesoro refinery appear to fit the criteria for support facilities. The District has stated that it will likely require a Title V permit for the Tesoro hydrogen plant but not for the refineries' truck loading operations.

Proposed Resolution:

- Based on discussions between EPA and District staff, require a Title V permit application for all support operations, similar to the carbon plant example.
- We would also like the District to make a list of all other operations that could potentially be part of the refinery, and provide an applicability determination for each one.

3. Chevron emission cap

Issues: The draft Chevron permit contains an emissions cap intended to limit emissions from many units at the facility. This emission cap includes permit language that appears to conflict with federally-approved SIP regulations by: 1) allowing future netting based on permitted emission rates rather than actual emission; 2) authorizing emission offsets for permanent reductions without cross-referencing other SIP requirements for generating offsets; and 3) allowing sources to violate the cap if they receive a variance (p C-3).

Proposed Resolution:

- Clarify in the permit that the cap may be used as an emission baseline only if allowed by District SIP rule 2-2 section 604.2.
- Clarify that emission reductions intended to generate offsets must meet the criteria of the District's SIP -approved NSR rule.
- Delete the two variance paragraphs identified in EPA's comment letters or add to them a statement that they do not affect federal enforceability of the cap. The above three changes will make those portions of the permit consistent with the Tesoro and Shell emission caps.
- Correct any underlying ATC permits that also contain these problems at some point in the future.

4. Chevron and Tesoro Emission Cap Enforcement.

Issues: 1) The Tesoro permit does not include the attachment that is supposed to list compliance methods and does not appear to contain Table A, which is supposed to list the units subject to the cap. 2) The Chevron permit specifies the use of emission factors in cases where there is current data showing that these factors are too low for VOC emissions from vessel loading operations and where NOx CEMs are installed at the larger combustion units. 3) The Tesoro permit allows the use of director's discretion to determine the emission rates for the VOC emissions without reference to EPA-approved test methods or a permit revision. 4) The Chevron cap states that fugitive emissions from "existing process units" are included, without specifying which existing process units existed at the time that the cap was set.

Proposed Resolution:

- Continue to request the compliance procedures for the Tesoro cap. Also request the inclusion of Table A, which according to the District contains the list of units subject to the cap, in the permit.
- Correct incorrect emission factors

- Remove director's discretion allowing the change of emission factors or establish acceptable criteria in the permit.
- Clarify "existing process units".

5. Chevron FCCU source testing

Issues: Chevron is required to test the FCCU at least quarterly and average the results to determine compliance with their annual average PM limit. The limit must be marked federally enforceable on pages 429 and 430 of table VII.C.2.1 since this is a BACT limit (see p. 325 condition #11066). Also, it is not clear whether Chevron could use shut-downs to bring down the average. They can perform additional tests if they get a result that they do not like during a quarter and therefore bring down the average for that quarter and dilute the impact of a source test with higher results.

Proposed Resolution:

- BACT limit must be marked federally enforceable
- Periods of non-operation cannot be used to reduce the hourly average emission rate.

6. Monitoring for Cooling Towers

Issue: The refinery cooling towers are subject to PM and POC limits of 0.15 gr/dscf and 300 ppm, respectively. The District has used calculations in an attempt to show that periodic monitoring of the cooling towers is not necessary to assure compliance with the emission limits because their margin of compliance under normal operations is so great. EPA acknowledges that the emissions calculated by the District are, in some cases, 20 to 30 times lower than the applicable limits. However, EPA has identified the following problems with the District's calculations that must be addressed.

a. missing calculations - No calculations were provided for eight Chevron towers and one Tesoro tower. Sources for which calculations have not been made should not be exempted from monitoring. To date, the District has not provided calculations for the following sources:
   - S4073
   - S4076
   - S4078
   - S4172
   - S4187
   - S6051
   - S6054
   - S6055
   - S846 (Tesoro)

b. emission factors - Rather than using source-specific data to calculate the PM and POC emissions, the District used D- and E-rated AP-42 emission factors. These ratings suggest the emission factors may not be representative of the actual emissions from the Bay Area refinery cooling towers. While the use of AP-42 factors may be appropriate in some permitting applications, EPA does not recommend using them as source specific permit limits or as emission regulation compliance determinations. The District verbally indicated that it used the AP-42 emission factors because they are more conservative than the source-

specific data that was available. However, EPA has been provided with no such demonstration. Moreover, the statement of basis says that the refineries ***may have*** supplied source-specific data for the cooling towers, suggesting that such a demonstration can not be made for all of the towers at all five refineries.

c. air circulation rates - The rate of air flow through many of the cooling towers is very high. According to the calculations provided by the District, some air flow rates are in the range of 2 to 5 million dscfm and the Valero tower has an air flow of 9.5 million dscfm. For the purposes of the calculations, the air flow dilutes the POC emissions and is one reason that the calculated emissions are so far below the 300 ppm limit of Reg 8-2. It is not clear whether the air flow rates used in the calculations are representative of the current and future operations at the refineries. Although a decrease in air flow may not automatically result in an increase in POC concentration, the permit does not require the refineries to monitor or record this parameter and the fact remains that the facilities could change it in such a way that the margin of compliance with the regulatory limit is no longer as great as the calculations show it to be at the present time.

d. water circulation rates - The calculated emissions are derived in part by multiplying the water circulation rate of the tower by the relevant emission factor. Many of the calculations are based on water circulations rates that are not currently enforceable. In the permits originally proposed to EPA in 2003, the District indicated that several of the throughput rates were under investigation. In the most recent versions of the permits, the throughput rates were simply left out and are presumably still unknown.

Proposed Resolution: In order to address these deficiencies,

a. The District should provide calculations for all of the cooling towers in the permits, including those specifically identified above. In its response to previous EPA comments, the District indicated that the SOB contains calculations for all operating cooling towers. The District should be advised that calculations should be provided for all cooling towers included in the Title V permit regardless of their current operational status. The District recently stated that all of the necessary calculations have been made but EPA has yet to see them.

b. The District should provide a demonstration in the statement of basis showing that the AP-42 emission factors are more conservative than the source-specific data for each of the cooling towers and that the emission factors are representative of the cooling tower emissions over the long-

term. If source-specific data is not available for all of the cooling towers, the District should obtain it from the sources or include schedules in the permits that require the sources to obtain it.

c. The District should explain why potential increases in the water circulation rates will not increase the PM and POC emissions to levels significantly greater than the current calculated amounts. The District should also explain how it intends to ensure that other operational parameters such as the air flow rates will not change in such a way that the District's decision about monitoring will remain valid throughout the lifetime of the permit. Lastly, the District should investigate the water circulation rates and include them in the permit as enforceable limits and it should consider whether or not it is necessary for the sources to keep records of the air flow rates.

d. The District should consider what monitoring activities the refineries are using to demonstrate compliance with other applicable requirements that could also be used to demonstrate compliance with Regulations 6 and 8-2. For example, S4210 at the Shell refinery is required to have a District-approved continuous hydrocarbon analyzer/recorder to determine the hydrocarbon vapor concentration in the cooling water. This information could easily be used to demonstrate compliance with the POC limit of Reg 8-2. Such a demonstration would be much more accurate and reliable than the one-time calculations provided by the District. EPA has noted additional instances in the other refinery permits where existing monitoring requirements regularly generate source-specific data that can be used in a similar way.

e. In addition to the considerations above, the District should also consider what other, more stringent limits may exist that would prevent the cooling towers from ever exceeding those of Regulations 6 and 8-2. For example, the District is in the process of setting a concentration limit for the POC content of the cooling water of S975 at the Tesoro refinery. If this limit is set sufficiently low, it and its associated monitoring requirements could be used to substantiate the District's claim that monitoring specifically for Regs 6 and 8-2 is not necessary.

The resolution proposed above will provide EPA with sufficient information to determine whether or not periodic monitoring of the cooling towers is necessary to assure compliance with the applicable limits. In the absence of the information requested above, or if the District does not agree with the proposed resolution, it should propose monitoring in the permits.

7 **Monitoring for compliance with control device requirements under NSPS and NESHAP** (All)

Issue: The NSPS and NESHAP regulations for equipment leaks, and the NSPS for VOC emissions from refinery wastewater systems require that enclosed combustion devices either be designed and operated to achieve a 95% control efficiency, or that the devices be operated with a minimum residence time and temperature. There appears to be no reasonable monitoring for these requirements in any of the permits. The monitoring listed for 60.692-5(a) appears to be a mistake: "Repair after emissions are detected within 30 days." The "monitoring" is actually an additional requirement of 60.692-5, but is not meant to, and does not, assure compliance with a control efficiency or a temperature/residence time requirement. Monitoring for compliance with the limits under all three of these standards should include continuous temperature monitors and gas flow meters.

	Chevron	Conoco-Phillips	Shell	Tesoro	Valero
60.692-5(a)	P/E: Repair after emissions are detected within 30 days	P/E: Repair after emissions are detected within 30 days	Not included as applicable requirement	P/E: Repair after emissions are detected within 30 days	Not included as applicable requirement
60.482-10(c)	None	None	Not included as applicable requirement	None	Not included in Section VII, but is in Section IV
61.242-11 (c)	None	Not included as applicable requirement	Not included as applicable requirement	None	Not included as applicable requirement

Proposed Resolution:

- Require continuous temperature and flow rate monitoring

8. Inadequate level of detail for wastewater NSPS (Chevron[1])

Issue: The permit does not include an adequate level of detail for the requirements of NSPS QQQ. For instance, the citation for 60.692-2 states "standards: Individual drain systems." While no emission limits are excluded (there are no emission limits in the

[1]Other wastewater issues for the refineries were not included in our initial discussion and will be considered separately.

NSPS), there are some compliance options that should be specified in the permit. 60.692-2, 60.692-3, and 60.692-5 have compliance options that should be specified in the permit, such as different inspection frequencies for drains out of active service depending on whether tight seals are applied. In addition, rather than complying with 60.692-2, a source may choose to comply with 60.693-1, and rather than complying with 60.692-3, a source may comply with 60.693-2. For instance, 60.693-1 says the source can elect to construct and operate a completely closed drain system rather than comply with 60.692-2. 60.693-1 prohibits any gaps or cracks in emissions interfaces.

Proposed Resolution:

- Where a compliance option exists, the permit should provide more detail to clarify which compliance option the source will use. The District should clarify whether the source will be complying with:

  1) 60.692-2 or 60.693-1
  If the source will be complying with 60.692-2 clarify whether the source will be complying with 60.692-2(a)(3) or (4).

  2) 60.692-3 or 60.693-2
  If the source will be complying with 60.692-3 clarify whether the source will be complying with 60.692-3(b), (c)(1), or (c)(2).